REMARKS/ARGUMENTS

Reconsideration of the application is respectfully requested for the following reasons:

Rejection of Claims 1-20 Under 35 U.S.C. §103(a)

Claims 1-20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kwon (US 2003/0025163 A1) and Murphy (US 6,541,343).

This rejection is respectfully traversed since the combination of Kwon and Murphy does not disclose the every elements of the claimed invention.

As shown in FIG. 9 of Kwon, the silicon epitaxial layer 224 is formed on the lightly doped diffusion layer 212 and the gate electrode 206 before the LDD-structured source/drain 227 is formed in the active regions adjacent to the opposite sides of the gate electrode 206. This feature is contrary to the claimed invention, which forms the source and drain regions in the semiconductor substrate before forming the epitaxial semiconductor layer on the gate electrode, the source and drain regions, for example. The LDD-structured source/drain 227 is formed after the silicon epitaxial layer 224 is formed on the lightly doped diffusion layer 212 by implanting the impurities into the active regions adjacent to the opposite sides of the gate electrode 206 through the silicon epitaxial layer, the first insulating layer pattern 214a, and the second insulating layer patterns and 216a, forming a heavily doped diffusion layer 226. Therefore, Kwon does not disclose every elements of the claimed invention.

In the teaching of Murphy, the field effect transistor structure has source/drain region 216/408 formed in the semiconductor substrate 201 and a single crystal silicon epitaxial layer formed in the recess 212 of the semiconductor substrate 201. However, the silicon epitaxial layer is deposited to form a source and drain structure, which is contrary to the claimed invention and the teaching of Kwon. The silicon epitaxial layer is not formed on the gate electrode 202 and an ion implantation process is then performed to complete the source and drain structure, which is also contrary to the teaching of the claimed invention and the teaching of Kwon. It is quite clearly that the combination of Kwon and Murphy fails to teach every element of the claimed invention and one with ordinary skill in the art would not combine the teachings of Kwon and Murphy to obtain the claimed invention.

Moreover, in FIGs. 2 and 3, the cleaning operation of Murphy is performed on the recess surfaces before the recesses are filled with silicon 216 by selective Si deposition process to form the source/drain terminals of Murphy, which is contrary to the claimed invention. The combination of this feature of Murphy and the teaching of Kwon provided by the Examiner actually violates the intended purposes of Murphy since Murphy wants to clean the recess surfaces before the source/drain terminals are formed. Meanwhile, the combination of this feature of Murphy and the teaching of Kwon actually fails to teach every element of the claimed invention since the cleaning process of Murphy cannot be performed on the source/drain terminals of Murphy because the silicon epitaxial layer 224 is already formed thereon. The combination of this feature of Murphy and the teaching of Kwon actually fails to show a step of performing a dry etching process with a carbon-free plasma source to remove a portion of a semiconductor substrate having metal-oxide-semiconductor devices each comprising a gate electrode, a

source region and a drain region before a selective epitaxial semiconductor layer is formed on the gate electrode, the source and drain regions. The LDD-structured source/drain 227 of Murphy is formed after the silicon epitaxial layer 224 is formed on the lightly doped diffusion layer 212 by implanting the impurities into the active regions adjacent to the opposite sides of the gate electrode 206 through the silicon epitaxial layer, the first insulating layer pattern 214a, and the second insulating layer patterns and 216a, forming a heavily doped diffusion layer 226. It is quite clear that the combination of Kwon and Murphy does not disclose every element of the claimed invention.

According to MPEP §2143, Basic Requirements of a Prima Facie Case of Obviousness[R-1], To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). That is, according to the last basic criteria of MPEP §2143, the teachings of these references actually fail to teach or suggest all the claim limitations. Therefore, the teachings of citations are actually insufficient to render the claimed invention unpatentable.

Conclusion

In light of the above remarks to the claims, Applicant contends that Claims 1-20 are patentable thereover. The claims are in condition for favorable consideration and Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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